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ABSTRACT

Developed in Bulgaria in the 1960's by Dr. Georgi Lozanov, Suggestopedia is a unique system of foreign language teaching, combining yoga relaxation and verbal suggestion with the direct method. In the 1950's in France, Dr. Alfred Tomatis began his research into the ear and the voice and subsequently developed his own unique system for treating dyslexia and teaching foreign languages. Both Lozanov and Tomatis are medical doctors, therapists and researchers who have been influenced by yoga. Both emphasize the teacher's authority, the pact of confidence between teacher and student, and the role of the physical and social environment. Both stress the importance of intonation or tone of voice as well as rhythmic presentation of material. Both the Tomatis and Lozanov Methods favor the use of baroque or classical violin music and emphasize the training of the ear and the development of memory through listening and repetition. Comprising an active and a passive phase or session, both systems promote indirect attention to, and unconscious absorption of lesson materials while the students are in a relaxed state. The aim of both Suggestopedia and the Tomatis Method is to develop the whole personality of the individual in a pleasant learning environment. (Author)

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The Tomatis Method and Suggestopedia: A Comparative Study

W. Jane Bancroft

It was in the late 1960's and early 1970's that, in Sofia, Bulgaria, at the Institute of Suggestology headed by Dr. Georgi Lozanov, a team of experts led by Aleko Novakov combined yoga relaxation and verbal suggestion with the direct method to produce a unique system of foreign language teaching: Suggestopedia. Somewhat earlier, in the 1950's in France, Dr. Alfred Tomatis began his research into the ear and the voice and began developing his own unique system for treating dyslexia, on the one hand, and teaching foreign languages, on the other. As in the case of Lozanov's Suggestology, Tomatis' system, which was originally applied to the field of medicine, led to important consequences for pedagogy.

There are, of course, differences between the Tomatis Method and Suggestology/Suggestopedia and the two systems cannot be considered mirror reflections one of the other.[1] However, there are a number of important similarities between Tomatis' and Lozanov's discoveries and methods, similarities which it is the purpose of this paper to explore.

Both Lozanov and Tomatis are medical doctors, therapists and researchers who have been influenced by yoga. As is well

known, Lozanov is a yogi. Tomatis' son is involved in the French Yoga Federation and Tomatis himself has studied yoga; in his autobiography, L'Oreille et la Vie, he pays tribute to the benefits of yoga and says that the ideal in medicine, as in education, should be a holistic approach based on yoga.[2] Lozanov continually emphasizes the integration of the conscious and the unconscious and the linking of mind and body; in Suggestology and Outlines of Suggestopedy, for example, he says that "suggestopedy stimulates not only the memory, but the whole personality--its interests, perceptions, creativity, moral development, etc."[3]

In his theoretical writings and his various pronouncements on Suggestology, Lozanov emphasizes the authority of the doctor or teacher and the "infantilization" or spontaneity and confidence of the subject or student. Tomatis stresses the role of the "maître" and underlines the importance of the personality of the therapist or teacher in much the same way as Lozanov.[4] And, like Lozanov, Tomatis declares that a special relationship or pact of confidence must exist between the doctor or teacher and the patient or student.[5] Suggestology talks about the role of the environment, both social and physical, using the term "double-planeness." Tomatis considers the milieu to be an essential factor in treatment or pedagogy and stresses the importance of the family atmosphere as well.[6] In Tomatis' therapy, the parents are involved from the beginning in the child's treatment process.

Lozanov stresses the importance of intonation or tone of voice in pedagogy as in therapy. While it would appear that the Bulgarian teachers at the Institute of Suggestology naturally possessed (or possess) the soft, persuasive, suggestive voice needed for reading the language dialogue over a musical background and hence needed (or need) little or no special voice training, the voice in Suggestology/Suggestopedia, as in Soviet therapy, is considered to be a stimulus capable of provoking emotional and physiological reactions in the subject.[7] Tomatis lays great stress on voice training and on the voice--not surprisingly, as he was trained as an ear specialist, his father was a well-known singer and he has spent many years treating singers' voice problems. Those individuals selected to make recordings for the Centre du Langage (Centre Tomatis) in Paris must have the appropriate voice quality: "[une voix] modulée, timbrée, riche en fréquences élevées."[8] Tomatis emphasizes the importance of the mother's voice in his treatment of dyslexia and recordings of the mother's voice are used during certain therapeutic sessions. While Lozanov does not seem to have mentioned anything on the subject--at least in writing--one remembers that women's voices have been the norm in the suggestopedic classroom in Bulgaria and the Soviet Union.

Lozanov emphasizes the importance of rhythm in the pedagogical or therapeutical process; in Suggestology and Outlines of Suggestopedy, he states, for example, that the rhythmically correct intonational presentation of the program for memorization ensures

that a large volume of material will be memorized and retained.[9] Tomatis also stresses the importance of rhythm in language and, in his treatment process for dyslexia, he uses a variety of rhythmic patterns in music and in voice.

An important theoretical principle of Suggestology is "concert pseudo-passivity." This term refers to the concept that rote learning or the healing process is best realized when the recipient is in a state of relaxed alertness. This state of "pseudo-passivity" is based on, or derived from Savasana yoga and may be brought about, in part, by the appropriate choice of music as background to a special concert session.[10] Like Lozanov, Tomatis believes in the importance of a relaxed atmosphere ("atmosphère de détente"), correct posture and proper breathing.[11] As we shall see, Tomatis favors music that is very similar to that originally used by Aleko Novakov in the suggestopedic séance. While the original suggestopedic session favored baroque violin concerti or baroque chamber music for strings and basso continuo, Tomatis prefers the high frequencies of Mozart violin concerti and/or the slow rhythm of Gregorian chants in his treatment of dyslexia, on the one hand, and in his basic language programs, on the other. Positive suggestions for pleasant learning, given while the subject is in a relaxed state, are a feature of both the Tomatis and Lozanov Methods.

Suggestopedia: The Original Suggestopedic Language Class

As set up at the Institute of Suggestology in the late 1960's and early 1970's by Aleko Novakov and his colleagues,

the original suggestopedic language class was based on, among other things, yoga and the Mauger direct method. Three forms of language learning--activity, conscious analysis and unconscious assimilation--were incorporated into the original language class in what was termed the "suggestopedic cycle."[12]

The four-hour intensive class normally began with a review of the previous day's lesson in the form of conversational exchange, songs, games, story-telling, plays and sketches. To help overcome inhibitions and to allow for more spontaneous expression in the classroom, each student was given a new name and a new profession. Each "foreign" identity assigned contained repetitions of one or more phonemes that students would find difficult to pronounce in the target language.

In the second part of the suggestopedic class, conscious analysis was realized in the form of reading, grammar and translation. The new material presented to the students consisted largely of dialogues based on "real life." The dialogues involved general or universal situations (home, family, daily activities, renting a hotel room, eating in a restaurant, city and country tours, cultural events) and were designed to stimulate positive emotions in the students. The dialogues were originally arranged on the page in groups of three, with five groups of three phrases or sentence fragments to a page. The translation of each word-group was provided in a column at the right of the page. All phrases were simple and straightforward

and, as in Soviet sleep-learning programs, each phrase presented one information unit. Since, during the original séance or relaxation session, each word-group was read during a time span of eight seconds and three phrases were read in twenty-four seconds, each page of dialogue involved two minutes and each ten-page dialogue twenty minutes of reading. Twenty minutes is considered to be the ideal meditation period in yoga.

The third part of the suggestopedic language class, the séance or relaxation session, provided for memorization of the new material at an unconscious level. Originally, at least for the "concert" part, the alternate Savasana posture was used. The students were trained to breathe deeply and rhythmically as a group to a count of eight that accorded with the teacher's reading of the language material and/or with the beat of the baroque slow movements in the background.

Originally based on two forms of yoga concentration (outer/inner), the séance was divided into two parts, active and passive, with active or outward concentration on the material preceding the rest and relaxation of passive meditation on the text. During the active session, the three words or phrases of each group were presented together, each with a different intonation or voice level: Where do you study English?--declarative; We study English at the Institute of Suggestology--whisper; Is the Institute a school for foreign languages?--loud command. The three intonations (declarative, whisper, loud command) correspond to three forms of yoga suggestion. During the active

session, the students looked at the dialogue on the printed page and repeated to themselves (using the technique of inner speech) the foreign-language words and phrases.

The original concert session (or passive part of the séance) was divided into three parts: 1) a two-minute introduction which served as a "countdown" (the opening Sarabande from Bach's Goldberg Variations played on the harpsichord with a metronome speed of 70 to 80, the beat of the normal human pulse; 2) a series of slow movements from baroque concerti grossi, lasting some twenty minutes, over which the teacher acted out the lesson dialogue with an emotional or artistic intonation and during which the students, with eyes closed, meditated on the text; 3) an allegro flute excerpt in a major key from baroque music, lasting some two minutes, which brought the students out of their deeply relaxed state.

The slow movements used in the original concert, excerpted from the concerti grossi of Corelli, Handel, Bach, Vivaldi and Telemann, have, by definition, a rhythm of 60 beats to the minute (MM 60), the ideal beat for meditation in Indian music. A sustained melody in the violin or string section and a steady bass accompaniment are other important features of baroque slow movements composed during the period 1700-1750. In the original concert session, the teacher maintained the correct rhythm of the language dialogues while giving each phrase an artistic reading. The lyrical and rhythmic music, the artistic and rhythmic rendering of the text by the teacher, the rhythmic,

deep breathing and meditative state of the students ("concert pseudo-passivity") contributed to a marked decrease in fatigue and tension and a marked increase in the memorization of foreign-language materials.

The Tomatis Method

Trained in France as an ear, nose and throat physician, Tomatis has also achieved world-wide recognition for his work in the area of learning disabilities. As part of his clinical practice in the 1950's and subsequently, Tomatis saw a wide range of patients, from opera singers to workers suffering from the effects of industrial noise. In treating these patients, he detected evidence that speech was affected by hearing loss. Further investigation of this phenomenon led Tomatis to the belief that one can only vocally reproduce what one can hear ("la voix ne contient que ce que l'oreille entend"), an axiom that was given official recognition in 1957 by the French Academy of Science as the "Tomatis Effect" (L'Effet Tomatis).[13]

Just as there is a difference between looking and seeing, where seeing involves the movement of the eye muscles for proper focussing, so, too, there is a difference between hearing and listening where listening involves the movement of specific ear muscles for proper "focussing." This means that a child may be able to hear well but still not be able to listen properly to what is being said to him; he may "hear" but not be able to integrate the message.

Tomatis believes that a listening deficiency causes the child to receive sound in a distorted manner. As the child makes unsuccessful attempts to discriminate between the verbal message and surrounding noise, he becomes fatigued and frustrated. His attention span is shortened. Moreover, the child's normal language development and, in consequence, his relationship to the outside world can be affected, especially if the ability to listen to particular frequencies is lost at an early age because of such illnesses as chronic ear infection. Since reading is the act of placing a phonetic or sonic image on a letter and spelling is the converse, a child's inability to listen properly may be a significant contributing factor in dyslexia. In addition, as a child attempts to cope with this listening deficiency, he may manifest such behavioral symptoms as withdrawal, hostility, hyperactivity and lack of motivation. Consequently, Tomatis believes that, in dealing with and treating learning problems, there is both a physiological need to train the individual to listen properly and a psychological need to enhance the person's self-image.

Unlike other methods which attempt to assist a child to adapt to, or compensate for a learning disability, the Tomatis Method attempts to "effect a repair." This is achieved through a controlled process of auditory stimulation using sophisticated electronic equipment and special control interviews with the child and his parents at defined times in the program. Although child-oriented, the Tomatis Method stresses parental involvement

since the interest and support of the parents is an integral and beneficial part of the program. (Tomatis considers the mother to be especially important in the treatment process and each mother is encouraged to take the same training as her child, especially in the early stages, so that she will understand what her child is experiencing). The child's teacher(s) can also provide encouragement and important feedback to the Tomatis Center program consultants by noting changes in the child's behavior. At appropriate intervals, such as at the end of the school year, case consultations may be held with the parents, teacher(s) and the Tomatis program consultants to assist the teacher(s) in planning the most appropriate courses for the following year.

The first step in the Tomatis program for treating dyslexia is the "initial assessment" of the child, an assessment which is conducted in two stages. Firstly, the child's case history is recorded and several tests are made--including a test of the child's listening ability. Then the child is interviewed by the Tomatis program consultant(s). In a second stage, several additional psychological tests are conducted to determine such factors as the child's intellectual ability and his level of general achievement. The initial assessment generally entails about four and one-half to six hours and is used to determine the child's current status and his ability (or inability) to benefit from the Tomatis program. The type of program recommended is based upon the results of the initial assessment.

The steps followed in the Tomatis Method are identical for everyone: they consist of a progression which simulates the various stages of listening and language development. The length and organization of each program-stage, however, may vary from child to child. Variations in the program are monitored by the consultant(s) through the control interviews. Individual program sessions last approximately thirty-five minutes and children usually come three times a week to the Tomatis Center for a two and one-half hour period (i.e., four tapes of thirty-five minutes). Separate remedial training is conducted in the appropriate subject(s) of study. Control interviews are planned to follow every twenty program sessions. As part of each control interview, the child receives a listening test and the child's progress is reviewed with the child and his parents.

The Tomatis program consists of two major parts: the "passive phase" (listening training), during which the child listens to sounds, and the "active phase" (audio-vocal training) which requires the subject's active and vocal participation. Employed throughout much of the program is the special electronic instrumentation specially designed by Tomatis--in particular, a machine called the "electronic ear."

Phase One: Listening Training or Passive Phase

During the first (or passive) phase, the child receives auditory stimulation through earphones which include a vibrating device placed on the forehead. (The earphones are attached to the "electronic ear" which is attached to the tape recorder).

Music is used in the initial stages of what is called a "retour sonique"--a return to the sound conditions of the mother's womb. (The sound world of the uterus resembles a liquid world, a waterfall with chirping noises; the mother's respiration is perceived as a kind of flux and reflux). The child listens to Mozart's symphonies or violin concerti; for Tomatis, Mozart is the universal composer[14] but such baroque composers as Vivaldi are also used. At first, the music is unfiltered but, as the thirty-five minute sessions proceed, the music becomes more and more filtered so that only the higher frequencies remain. (The acoustic impressions the foetus receives in the uterus are high-frequency sounds; filled with water, the foetal ear acts like a filter, selecting, as it were, the frequencies the foetus hears).[15] The child thus hears Mozart violin music--the violin being the instrument that has the most high frequencies--from, say, sessions one through fourteen, with the progressive removal of frequencies below 1,000 Herz, 2,000 Herz, 3,000 Herz, 4,000 Herz, and so on. As the music becomes more and more filtered, finally only those frequencies above 8,000 Herz are present in the "music." According to the research that has been conducted by Tomatis and his associates, high frequencies bring about a state of relaxation, on the one hand, and stimulate the cortex, on the other.[16] Low frequency sounds, in contrast, provoke a state of fatigue and anxiety.

With session fifteen, the child begins listening to a recording of the mother's voice, at first in a very filtered

form (i.e., only those frequencies above 8,000 Herz are present). According to Tomatis, one's first desire is to communicate with the mother and/or to recommunicate with the mother in the womb. Tomatis uses female voices in his various language programs, particularly in the beginning stages. The male voice, the voice of the "father," is heard later. With adopted children, a "maternal" voice is still used and, in foreign language training, a female native speaker replaces the mother, so to speak, in the reading of texts. Initially, the mother's voice sounds something like crickets chirping as only high-frequency sounds (such sibilants as s, z and th in English) are audible. The mother's voice is perceived as one perceived it in the womb. From sessions fifteen through fifty, in the various stages of what is called an "accouchement sonique," the mother's voice becomes less filtered as the missing frequencies are gradually reintroduced. In the same way as a baby progressively hears during the ten days after birth in his evolution from the liquid world of the foetal ear to the sound world of air, one begins to hear a thin voice, then a more complete voice and finally the full voice of the mother reading a story. The mother undergoes voice training, if necessary, in order to learn to position her voice correctly and the reading proper is done under the "electronic ear" to improve the timbre of the voice.[17]

In this approximation (or simulation) of a sonic birth, the child at first does not recognize the mother's voice but

he is able to identify it (and to identify with it) at the end of the process. By session sixty-two (or thereabouts), the child begins to hum and repeat words; the active phase has begun. One might add, however, that the child does not remain entirely "passive" while listening to the filtered music and the filtered voice of the mother. While wearing head phones and a head band, with the sound volume adjusted to a comfortable level, he or she is engaged in a variety of creative activities such as drawing, writing and playing games in a specially designed room. As in the suggestopedic passive séance, emphasis is placed during the passive phase of the Tomatis Method on indirect attention.

During the so-called passive phase, the children are especially encouraged to do art work and all drawings are kept on file by the staff of the Tomatis Center. Usually the child's progress while listening to filtered music can be clearly seen in the creativity of his drawings; these become more decorative, more expressive, better defined. Colors are brighter. It would appear that the awakening of the ear has a positive effect on the eye. The daily sessions are supervised by a staff of therapists who have a background in such fields as special education and psychology and who have undergone special training under Tomatis' direction. Daily observations of the children are recorded by the therapists and assistants. These reports as well as discussions with the program consultant(s) provide an on-going assessment of the child's progress at the Center.

During the passive phase a number of changes begin to occur in the children. According to Tomatis, retraining the ear has a positive effect on the entire nervous system. Right from the beginning of the program, the children frequently show changes in eating, sleeping and other behavioral patterns. During and following these early changes, the child appears to be calmer, more outgoing and in better humor. Parents often mention that their child is more communicative and takes a greater interest in family activities. A balance is achieved: the more excitable child calms down and the more withdrawn child opens up. The child also mentions that he or she can hear people talking more clearly: "They don't have to repeat what they say." The child starts to read (or reads more than usual) and reports that reading is easier and more interesting. The child's attitude towards learning in school often becomes more positive. His concentration begins to improve.

Much of the music research of Tomatis and his associates has centered on the effects of filtered music on children with communication problems and learning disabilities. Since filtered music reproduces the sonic atmosphere of the mother's womb, the sessions of filtered music may be said to be situated, in the educational memory of the child, between life in the womb and the beginnings of the acquisition (or the hearing) of language. Filtered music acts as a catalyst, relaxing the child, on the one hand, but stimulating him, on the other, to participate in the world of sounds that precedes the world of

speech.[18] The filtered music allows the child to recoup his needed energies so that he may overcome his learning and communication problems. Sessions of filtered music are frequently used in alternation with language sessions in Tomatis Centers, even after the so-called passive phase has been completed.

The Active Phase: Audio-Vocal Training

The purpose of the active training phase is to help the child use properly his new listening ability. An analogy is made in the Tomatis Center literature to a pianist who, having learned to play on an out-of-tune piano, must now be taught to play a properly tuned instrument. During this phase, the child is asked to listen to tapes of different kinds (songs, words, sentences, for example) while under the "electronic ear" and to reproduce vocally what he hears into a microphone. Singing is particularly favored as a memory-training and linguistic-structuring device. Tomatis makes use of Gregorian chants which the child hears and repeats during the active phase; Gregorian chants are used because of their slow rhythm and high frequencies. During the active phase of a foreign-language training program, foreign-language songs are used. The reproduced sound is automatically adjusted by the electronic equipment so that the child hears his or her own voice correctly. Furthermore, during the audio-vocal training period, a balance system permits the sounds to be focussed progressively on the right ear (i.e., the left hemisphere of the brain) which Tomatis believes is the

key to proper listening. The child is encouraged to read aloud, both during the sessions and at home. This active phase continues through a series of sessions and control interviews until a combination of the results of the listening tests, observations, reading tests and interviews signals an end to the program.

It might be added that the same system of active and passive phases is applied to the learning of the basic elements of a foreign language. Vocabulary taught in Tomatis sessions (i.e., active sessions) takes word frequency and sounds into account; for example, those words first used in an English program are those which are rich in high frequencies, the sibilants.

The end of the appropriate Tomatis program for the treatment of dyslexia generally occurs after twenty to twenty-four weeks of training. Each child will usually be asked to return once a month for two months and thereafter every other month for follow-up control interviews and evaluations. However, a long history of academic failure may leave the child hesitant to put into practice his newly developed abilities to listen and to learn. Furthermore, he or she may still suffer from poor learning habits. The help and support of parents and teachers will be important at this stage as the child strives to accomplish his or her goals. In follow-up control interviews with the Tomatis program consultant(s), tutoring or special teaching may be recommended.

The Electronic Ear and Language Training

An important feature of the Tomatis programs for treating dyslexia and communication problems, on the one hand, and teaching basic elements of foreign languages, on the other, is the use of a special machine called the "electronic ear" (L'Oreille Electronique). A definition of the electronic ear is given in a work by Robert Lafon, Vocabulaire de Psychopédagogie et de Psychiatrie de l'Enfant and repeated by Tomatis in his book, Education et Dyslexie: "Appareil composé d'un microphone, d'amplificateurs, de filtres et d'écouteurs, employé pour la rééducation des troubles phonatoires et de la dyslexie. Couplé avec un magnétophone, il permet le conditionnement aux langues étrangères."[19] A specially designed machine placed between the tape recorder and the head phones, the electronic ear modifies the sounds the recipient hears and, more especially, retrains the ear to hear sound correctly, in particular high-frequency sound.

Not surprisingly, since he is an ear specialist, Tomatis lays great stress (some would say too great) on the importance of the ear in language training. In a monograph by his wife and collaborator, Léna Tomatis, entitled L'Intégration des Langues Vivantes, one finds statements like the following: "On parle avec son oreille"; "On apprend une langue vivante en l'entendant et en l'entendant correctement."[20] Tomatis well realizes that the best place to learn, say, French, is in a French-speaking milieu or country. In the classroom, which is an artificial milieu by definition, the student must be "integrated" into the sound

universe ("univers sonore") of the foreign language. The electronic ear is particularly useful in this regard because, by changing the frequencies the ear hears, it permits the student to hear and, eventually, to speak in the manner of the appropriate native speaker.

Through the use of the electronic ear, Tomatis recreates the hearing conditions of childhood when one learned one's mother tongue. He believes that if, during a given period of time, the "lost" frequencies are made audible to the ear, these frequencies will once again become a part of speech. The adult learner thus recovers the "ear" he possessed in childhood and is able to hear correctly the appropriate foreign-language sounds. Tomatis is particularly interested in retraining the right ear (which he calls "L'Oreille Directrice") because he believes that the right ear controls such language parameters as intensity, timbre, intonation, inflection and semantics.[21]

An interesting aspect of Tomatis' research involves the analysis of the frequency range of a number of European languages, including Russian. The human ear is able to perceive frequencies ranging from 20 cycles per second (20 Herz) to 20,000 cycles per second (20,000 Herz). However, if an individual is raised in a given linguistic environment, his ear will gradually "hear" only those frequencies that are a part of his mother tongue. Statistical analyses of "English" English show that the native English speaker uses a frequency range that is

between 1,800 Herz and 12,000 Herz. The Italian ear, meanwhile, can "hear" frequencies between 2,000 and 4,000 Herz while the French ear is tuned to hear frequencies between 800 and 1,800 Herz. The Russian ear is tuned to a frequency range going from the lowest to the highest frequencies which the human ear can normally perceive. It has always been said that the Slavs "have an ear" for languages and Tomatis' research proves this statistically. These frequency-range analyses relate to Tomatis' ideas on language training because "entendre" and "reproduire" are two essential principles of Tomatis' language programs. If one is listening, say, to English with a French ear, one will not be able to reproduce English accurately. By the same token, a native English speaker could be "deaf" to the subtilities of French vowels, all crowded, so to speak, into a narrow frequency range.[22]

By modifying the frequencies the ear hears, the electronic ear "opens" the human ear to the new sounds and different frequency range of the foreign language. In contrast to the language lab where the student very often does not "hear" the foreign-language sounds correctly and thus is unable to reproduce them, the electronic ear permits the correct perception of the "foreign" sounds and gives rise to correct reproduction. Tomatis is critical of the audio-visual methods generally in use for, he says, they fail to take into account the special relationship which exists between audition and phonation. Tomatis believes that the electronic ear should become a part

of every language laboratory because he has found that this special machine improves not only the student's accent and speech patterns but also his auditory memory. The electronic ear trains the student to listen to his own speech: "Parler, c'est s'entendre."[23] It is the ear which must regulate such linguistic elements as intonation and inflection and, while under the electronic ear, the student learns to monitor himself in these matters through listening to himself speak.

In L'Intégration des Langues Vivantes, Tomatis recommends that the electronic ear should be used before foreign language lessons actually begin so that the ear may become conditioned to the sounds of the foreign language.[24] Of course, recordings and equipment should be of very good quality and the frequency range of the equipment should be verified; the sound reproduction should be accurate for the frequency range of the appropriate language. For false beginners, Tomatis recommends the same procedure, i.e., one must begin over again in order to correct the students' false perception of the foreign-language sounds. Together with (or as a part of) lessons in class, at least ten or fifteen minutes a day should be devoted to phonetics exercises while the students' head phones are attached to the electronic ear. These phonetics exercises should involve sounds, rhythms and intonation patterns, i.e., those elements of the foreign language that the student usually has the most problems learning. The student's pronunciation should be worked on and the phonetics exercises should involve

continual student participation.

As in the original active session in the suggestopedic language class, Tomatis emphasizes that a very effective technique for learning foreign languages is the combination of audio and visual elements: "Le sujet, livré à lui-même devant l'appareillage, suit des yeux l'image qui lui est projetée tandis que le texte s'y rapportant lui est injecté dans les oreilles par un casque d'écoute relié à un magnétophone."[25] Parallel to the phonetics exercises, visual images can be projected onto a screen so that the student can coordinate sound and image.

Following this special training with the electronic ear and together with it after an introductory period, the student must, of course, be taught grammar and vocabulary. Tomatis' language programs involve a movement from son to sens. Tomatis says that his programs--and especially those which involve the electronic ear--can be used in conjunction with recognized modern methods.[26] The Tomatis Effect can also be combined with scientific research in such fields as phonetics and phonology.

Conclusion: Suggestopedia and the Tomatis Method

A number of theoretical comparisons between Suggestopedia and the Tomatis Method were noted at the beginning of this paper. Insofar as the practical aspect of both systems is concerned, it is interesting to note the common use of active and passive phases or sessions, although there are differences between the active and passive sessions in Suggestopedia and the active and

passive phases of Tomatis' programs. (These differences relate mainly to program content). In the original suggestopedic séance, the active part of outward concentration on the text, combined with inner speech or silent repetition of the text, preceded the passive part of inner meditation on the dialogue which the teacher read over a background of baroque slow movements. In contrast to Lozanov, Tomatis puts the passive phase of indirect attention and music (music which is similar to that used in the original suggestopedic concert) before the active phase of concentration on the text and speaking or reading aloud.[27] According to Tomatis, music seems to provoke in the child the memory of a pre-linguistic stage, as well as the desire to speak and communicate.

Both the Lozanov and Tomatis Methods favor listening before speaking. In the Tomatis programs, with their emphasis on the ear, the child (or the student) is trained to listen in order to correct his speaking or reading problems and/or learn the basic elements of a given foreign language. According to Aleko Novakov's theory of "interiorization of language," meditation on, or visualization of a text furthers the students' ability to speak and communicate, as well as memorize. In the original language classes at the Institute of Suggestology, a given suggestopedic dialogue was read to the students during the active/passive séance and then elaborated upon in conversations, games and sketches the following day. It could be said that both Suggestopedia and the Tomatis Method favor the ear (but

Tomatis' system much more so) and that, in both methods, there is a transfer from ear to performance. Tomatis favors electronic equipment, whereas Lozanov and his colleagues have been opposed to such things as language laboratories. One could say, however, that no electronic ear was needed in Bulgarian or Soviet Suggestopedia because, according to Tomatis' research, the Slavs hear all the frequencies necessary for learning a Western foreign language.

Both Suggestopedia and the Tomatis Method use a variety of activities in language learning (games, for example) and both attach particular importance to singing. Both systems stress the importance of repetition and the coordination of the oral and the visual, of sound and image. Both methods are said, by their proponents, to develop attention span and memory. And, finally, both the Tomatis and Lozanov Methods are holistic in that they aim to develop the whole personality of the individual in a pleasant learning environment.

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Notes

[1] See, in contrast, a comparison of Caycedo's Sophrology and Lozanov's Suggestology in my article, "Caycedo's Sophrology and Lozanov's Suggestology: Mirror Images of a System," ERIC Documents on Foreign Language Teaching and Linguistics, 1979. 20 pp. ED 183 033.

[2] Alfred Tomatis, L'Oreille et la Vie (Paris: Editions Robert Laffont, 1977), p. 129; pp. 259-61.

[3] Georgi Lozanov, Suggestology and Outlines of Suggestopedy (New York: Gordon and Breach, 1978), p. 251.

[4] Alfred Tomatis, Education et Dyslexie, 3rd ed. (Paris: Editions E S F, 1978), pp. 36-37.

[5] Tomatis, L'Oreille et la Vie, p. 269.

[6] Tomatis, Education et Dyslexie, pp. 50-51; pp. 141-43.

[7] See my article, "Suggestology and Suggestopedia: The Theory of the Lozanov Method," ERIC Documents on Foreign Language Teaching and Linguistics, 1977 (ED 132 857), pp. 40 ff. Yoga emphasizes the correct positioning of the voice and the special voice or Terpnos Logos in Sophrology is considered to be instrumental in bringing about the appropriate state of relaxed alertness in the patient or student ("Caycedo's Sophrology and Lozanov's Suggestology: Mirror Images of a System," pp. 4-5).

[8] Tomatis, Education et Dyslexie, p. 142.

[9] Lozanov, pp. 196-97.

[10] "Suggestology and Suggestopedia: The Theory of the Lozanov Method," pp. 46-48.

[11] Tomatis, Education et Dyslexie, p. 119; p. 134; pp. 140 ff.

[12] See my article, "The Lozanov Language Class," ERIC Documents on Foreign Language Teaching and Linguistics, 1975. 53 pp. ED 108 475.

[13] Most of the material of pages 8-11 of this paper is taken from Tomatis Center literature and merely rephrased.

[14] Tomatis, L'Oreille et la Vie, p. 243.

[15] L'Oreille et la Vie, p. 198; p. 206.

[16] Paul Madaule, "Musique et Musicothérapie: Musique Filtrée et Pédagogie," IIIe Congrès International d'Audio-Psycho-Phonologie, Antwerp, 1973, p. 2. See also, Alfred Tomatis, "Nouvelles Théories sur la Physiologie Auditive," IIe Congrès International d'Audio-Psycho-Phonologie, Paris, 1972, pp. 15-16.

[17] Much of the material of this section is taken from interviews conducted at the Tomatis Center in Scarborough, Ontario (Canada).

[18] Alfred Tomatis, "La Musique et ses Effets Neuro-Psycho-Physiologiques," XIIIe Congrès de l'ISME (International Society for Music Education), London (Canada), 1978, p. 14.

[19] Tomatis, Education et Dyslexie, p. 145.

[20] Léna Tomatis, L'Intégration des Langues Vivantes (Paris: Editions Soditap, 1970), pp. 5-6.

[21] Léna Tomatis, L'Intégration des Langues Vivantes, p. 9.

[22] Derek de Kerckhove, "Pour une méthode audio-phonologique de l'intégration d'une langue," University of Montreal, 25 August 1978. (I am indebted to my colleague, Professor de Kerckhove, for first bringing the Tomatis Method to my attention).

[23] Léna Tomatis, L'Intégration des Langues Vivantes, p. 33.

[24] L'Intégration des Langues Vivantes, p. 34.

[25] L'Intégration des Langues Vivantes, p. 32.

[26] See, for example, a report by Roger Schenkel et al., "Utilisation de l'Oreille Electronique à Effet Tomatis dans le cadre du cours d'anglais d'une première année de l'enseignement secondaire belge," Athénée royal de Comines, September 1977.

[27] In his memory-training system, Dr. Alfonso Caycedo also puts the passive phase of indirect attention before the active phase of outward concentration on the text. See: "Caycedo's Sophrology and Lozanov's Suggestology," pp. 15-16.